

for  
single sideband  
at  
its very best...

the triple conversion

# HAMMARLUND HQ-170



Check the features of the HQ-170! Better still, try out an HQ-170, the communications receiver designed to meet all the requirements modern SSB reception. It's a radio amateur's ideal, offering him everything he ever ordered in performance, tuning techniques, and dependability.

In effect, the HQ-170 combines the most desirable features of the hottest amateur receivers with the outstanding features of the finest SSB/CW and AM/MCW converters. Functionally, it is a combination of the famous Hammarlund HQ-110 and HC-10 with many added features. And it's all packaged in a neat, compact receiver, that's a joy to operate.



# HAMMARLUND

#### Triple Conversion...

17-tube superheterodyne circuit with automatic noise limiter.

#### Frequency Range...

Full dial coverage of the 6, 10, 15, 20, 40, 80 and 160 meter amateur bands.

#### Slot Filter...

Razor sharp. 1.5 KCS at 6 db. Adjustable  $\pm 5$  KCS over passband for better than 40 db attenuation. Additional attenuation of 20 db at any point by Slot Depth Control.

#### Separate Vernier Tuning...

$\pm 3$  KCS for easy SSB tuning.

#### Separate Linear Detector...

Linear product detector for CW and SSB reception, plus normal diode AM detection.

#### Tuned IF Amplifier...

Seven selectivity positions provide mechanical filter type skirt selectivity.

#### Selectable Sideband...

Upper, lower, or both sidebands selected from front panel.

#### BFO Control...

$\pm 2$  KCS.

#### Fast Attack AVC...

Selectable, OFF, SLOW, MEDIUM, FAST decay speeds. AVC obtained from high selectivity 60 KCS IF.

#### Crystal Calibrator...

Built-in 100 KCS crystal calibrator.

#### Dial Scale Reset...

Easy-to-use, adjustable calibration for frequency dials.

#### Automatic Noise Limiter...

Combination noise limiter and squelch.

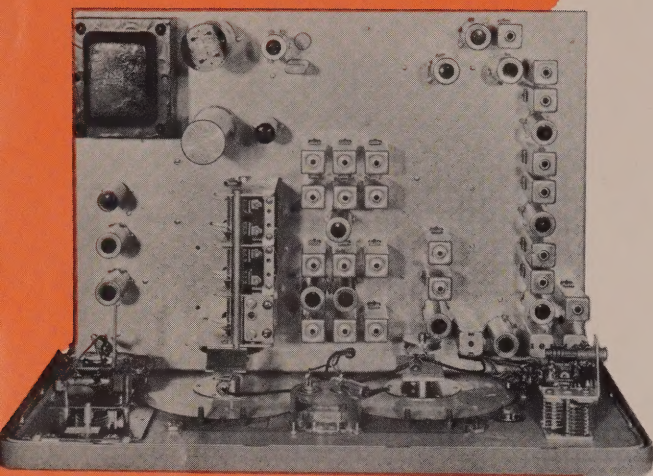
#### Auto-Response...

Automatically adjusts audio response to fit receiving conditions.

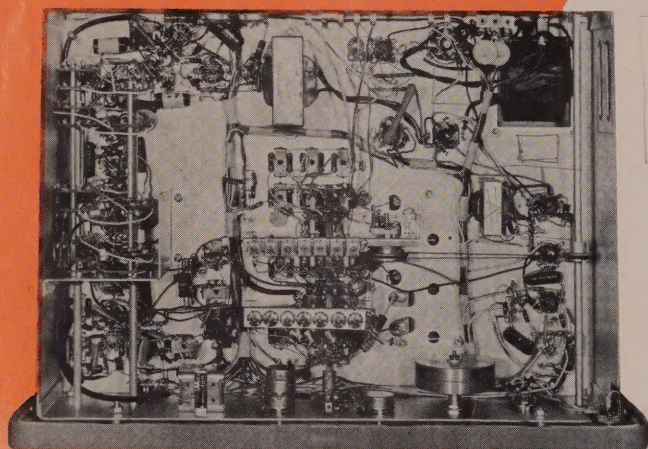
#### Cabinet...

Modern, super-ventilating type with sturdy, attractive front panel.

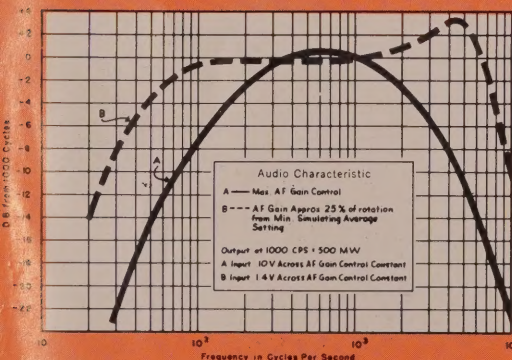




TOP VIEW



BOTTOM VIEW



HQ-170 AUDIO CHARACTERISTIC

Starting with the front panel layout, the careful selection of high-reliability components, the craftsmanship of skilled technicians, and the addition of engineering leadership result in a receiver worthy of the Hammarlund name in quality and performance.

The HQ-170 offers the amateur a practically endless combination of tuning techniques whereby optimum reception of SSB/CW and AM/MCW may be achieved. Through the use of the vernier tuning, adjustable bandwidth, and the basic, precision front-end of the HQ-170, the user has full control over SSB signals as well as adjacent, or co-channel signals. If there's a signal to be received, the HQ-170 can ferret it out . . .

The HQ-170 is a "hot" receiver. It will provide 10 db signal-to-noise ratio at 1.5 uvolt AM or approximately .5 uvolt CW, or better depending on bandwidth. The front-end provides tuning of the 6, 10, 15, 20, 40, 80 and 160 meter amateur bands. The receiver is designed for use with a single wire flat top, a folded dipole, or doublet antenna. Separate antenna terminals are provided for 6-meter reception, so that a separate 6-meter coaxial antenna may be installed to achieve the ultimate in receiving sensitivity at this frequency.

## CIRCUITRY

The HQ-170 is a triple-conversion receiver on the 7 MCS through 54 MCS bands and dual conversion on the 1.8 MCS to 2.0 MCS and 3.5 MCS to 4.0 MCS bands.

Starting at the front-end, the HQ-170 utilizes a (6BZ6) tuned RF amplifier and a separate mixer (6BE6) and oscillator (6C4) for a high degree of stability. Advanced designed and modern tube types account for the very high gain and low noise factor. Refer to back page for complete listing of the many possible functions and the complete tube lineup.

Low-loss sockets, coil forms, and bandswitch wafers, plus temperature-compensating capacitors, and the application of regulated power to the oscillator circuit provide a high degree of stability. Drift, after warmup, is less than 0.01%.

## BANDSPREAD

Electrical bandspread tuning with direct dial calibration is provided for all seven bands; 160, 80, 40, 20, 15, 10 and 6 meters. Through the use of two dials, optimum bandspread has been achieved by greater dial scale length. A 0-100 logging arbitrary scale is also included.

## TRIPLE CONVERSION

The HQ-170 offers triple conversion with IF frequencies of 3035 KCS, 455 KCS, and 60 KCS, providing excellent rejection of image-response. The second IF is heterodyned with a crystal-controlled oscillator. The third IF is heterodyned with a high stability, adjustable oscillator which contains micro-accurate vernier tuning control, located on the front panel.

## IF AMPLIFIER

The 3035 KCS and 455 KCS IF amplifiers provide eight tuned circuits in three stages of amplification. Six tuned circuits in the three-stage 60 KCS amplifier provide either the second or third



conversion, depending upon the operating band. All IF circuits employ iron-core permeability-tuned transformers for high performance and retention of alignment accuracy. The 60 KCS amplifier selectivity is controlled from the front panel by seven positions: 1-2-3 KCS on either sideband, and .5-2-4-6 KCS on both sidebands. The skirt selectivity of this system approaches that of the mechanical filter. A separate front panel switch is used to select upper, lower, or both sidebands, providing rapid, simple means of sideband selection.

## SLOT FILTER

The slot filter provides a notch of better than 60 db attenuation over the entire range of  $\pm 5$  KCS from the center IF (455 KCS) frequency. The slot filter control provides 40 db attenuation, plus an additional attenuation of up to 20 db obtainable by use of the slot depth control at a particular frequency. The 6 db width of the slot is approximately 1.5 KCS. Accurate frequency adjustment of the slot is obtained by means of an 8:1 vernier control. The slot filter circuit consists of a Bifilar "T" trap.

## SEPARATE VERNIER TUNING

$\pm 3$  KCS vernier tuning allows extra-fine passband tuning between the 455 KCS IF and the 60 KCS IF for additional selectivity and easy tuning of the desired signal.

## AVC

An extremely fast-attack delayed AVC circuit is employed in the HQ-170. A control is provided on the front panel permitting the selection of OFF-SLOW-MEDIUM or FAST decay time for optimum results on various signals. The AVC is taken from the high selectivity 60 KCS IF.

## S-METER

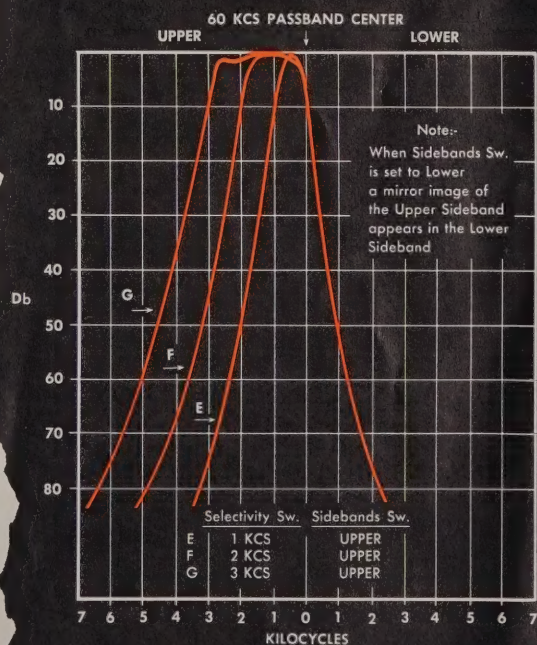
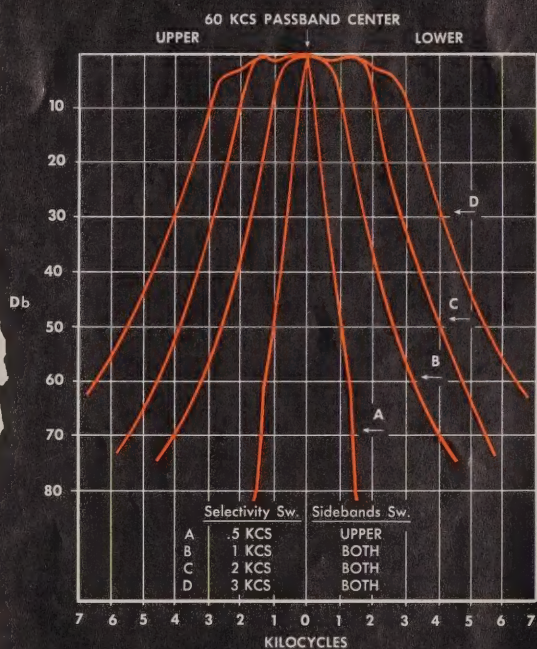
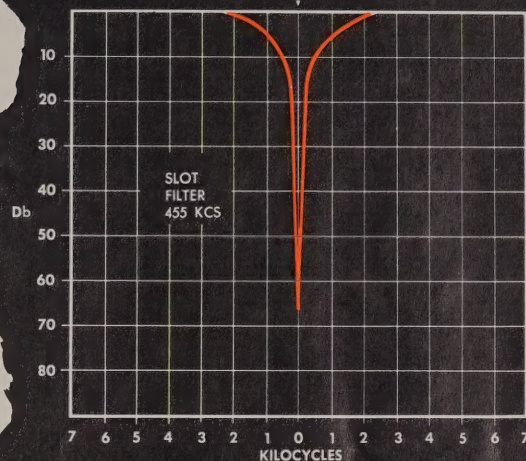
Readings of signal strength and "on-the-point" tuning indications are provided on all types of signals by a high-response S meter circuit. The scale is calibrated to 40 db over S-9 and is factory-calibrated so a signal of approximately 50 microvolts reads S-9. Each S-unit indicates approximately a 6 db increase, equivalent to doubling the signal strength.

## AUDIO

The HQ-170 features the exclusive Hammarlund Auto-Response which automatically adjusts the audio passband to best meet the receiving conditions. A (6AQ5) provides 1.0 watts for maximum undistorted output. The Auto-Response circuit employs controlled feedback which is decreased as the gain control is turned up, thus narrowing the audio passband. As the gain is decreased, the feedback increases, thus permitting a greater frequency response in the audio output. The result is crisper, easier to read sound on weaker signals, and broader, more realistic reproduction on stronger signals.

The audio output may be used with either earphones or loudspeaker. The phone plug automatically silences the speaker upon insertion. The Auto-Response permits tops in listening pleasure of AM, SSB, and CW reception.

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# HQ-170


## SPECIFICATIONS

<b>Amateur Bands Covered:</b>	6, 10, 15, 20, 40, 80, and 160 meter bands.																						
<b>Calibration:</b>	Dial markings every 5 KCS on 20, 40, 80, and 160 meter bands; every 10 KCS on 15 meter band; every 20 KCS on 10 meter band; every 50 KCS on 6 meter band. Plus 0-100 arbitrary logging scale.																						
<b>No. of Freq. Conversions:</b>	Dual on 160 and 80 meter bands. Triple on 40, 20, 15, 10, and 6 meter bands.																						
<b>Freq. Range Covered:</b>	1.8-2.0 Mcs.    3.5-4.0 Mcs.    7.0-7.3 Mcs.    14.0-14.4 Mcs.    21.0-21.6 Mcs.    28.0-30.0 Mcs.    50.0-54.0 Mcs.																						
<b>Maximum Audio Output:</b>	1.0 Watt (Undistorted)																						
<b>Passband Tuning Range:</b>	plus/minus 3 KCS with calibration every 1 KC. 8:1 vernier tuning ratio.																						
<b>Output Impedance:</b>	3.2 Ohms (RETMA Standard)																						
<b>AVC Action:</b>	Operates on RF and 3 IF stages. Provides fast charge—adjustable discharge smooth acting AVC. Delayed AVC applied to the RF and (1) IF stage. Better than .001 second attack time and .01-1-1. Second decay time. Off position.																						
<b>Adjustable Selectivity and Selectable Sidebands:</b>	6 db bandwidths    Upper sideband—1-2-3 kcs    Lower sideband—1-2-3 kcs    Both sidebands—5-2-4-6 kcs																						
<b>Sensitivity:</b>	An average of 1.5 microvolts produces 10:1 signal-to-noise ratio on AM approximately .5 uv on CW.																						
<b>Antenna Input:</b>	100 ohms nominal balanced or unbalanced. Provision for separate 50 ohm coaxial 6 meter antenna.																						
<b>Antenna Compensator:</b>	Permits compensation for loading effects of various type antennas, or balanced transmissions line.																						
<b>Beat Freq. Oscillator:</b>	Variable from zero beat plus/minus 2 kcs.																						
<b>Slot Filter:</b>	Range plus/minus 5 kcs of center frequency. Attenuation over plus/minus 5 kcs range provides over 40 db. Calibrations every 1 kc. Maximum attenuation using slot depth control is 60 db. 8:1 vernier tuning ratio.																						
<b>Tube Complement:</b>	<table><tr><td><b>6BZ6</b> RF Amplifier</td><td><b>6BA6</b> 60 kc IF Amp.</td><td><b>6AV6</b> 1st AF Amp.-Delayed AVC Clamp</td></tr><tr><td><b>6BE6</b> 1st Converter</td><td><b>6BA6</b> 60 kc IF Amp.</td><td><b>6AQ5</b> Audio Power Output</td></tr><tr><td><b>6C4</b> HF Oscillator</td><td><b>6BV8</b> 60 kc IF Amp. AVC-AM Det.</td><td><b>5U4GB</b> Rectifier</td></tr><tr><td><b>6BE6</b> 2nd Mixer-Crystal Osc.</td><td><b>12AU7</b> SSB Product Detector</td><td><b>0B2</b> Voltage Regulator</td></tr><tr><td><b>6BA6</b> 455 kc IF Amp.</td><td><b>6AL5</b> Noise Limiter</td><td><b>6BZ6</b> Crystal Calibrator</td></tr><tr><td><b>6BE6</b> 3rd Mixer-Variable Osc.</td><td><b>12AU7</b> BFO-"S" Meter Amplifier</td><td></td></tr></table>	<b>6BZ6</b> RF Amplifier	<b>6BA6</b> 60 kc IF Amp.	<b>6AV6</b> 1st AF Amp.-Delayed AVC Clamp	<b>6BE6</b> 1st Converter	<b>6BA6</b> 60 kc IF Amp.	<b>6AQ5</b> Audio Power Output	<b>6C4</b> HF Oscillator	<b>6BV8</b> 60 kc IF Amp. AVC-AM Det.	<b>5U4GB</b> Rectifier	<b>6BE6</b> 2nd Mixer-Crystal Osc.	<b>12AU7</b> SSB Product Detector	<b>0B2</b> Voltage Regulator	<b>6BA6</b> 455 kc IF Amp.	<b>6AL5</b> Noise Limiter	<b>6BZ6</b> Crystal Calibrator	<b>6BE6</b> 3rd Mixer-Variable Osc.	<b>12AU7</b> BFO-"S" Meter Amplifier					
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<b>Power Supply:</b>	105-125 Volts 50-60 cps. a.c. power consumption, 120 watts.																						
<b>"S" Meter:</b>	Calibrated 1 to 9 in steps approximately 6 db. Also includes db scale, above S-9 to plus 40 db. (Meter deflects on all types of signals.)																						
<b>Noise Limiter:</b>	Adjustable series type provides both positive and negative clipping.																						
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<b>Rear Panel Equipment:</b>	Terminal for speaker connections. Terminals for balanced and unbalanced antennas, with separate 6 meter antenna connections. Jack for external send-receive relay connections. Fuse.																						
<b>Dimensions:</b>	10½" H x 19" W x 13" D Wt. 38 lbs. Shipping Wt. 45 lbs.																						

The policy of the Hammarlund Manufacturing Company, Inc. is one of continued improvement in design and manufacture and whenever possible, to provide the best attainable quality and performance. Hence, specifications, finishes, etc. are subject to change without notice and without assumption by Hammarlund of any liability or responsibility to provide such features may be changed, added or dropped in any subsequent production runs of this equipment.



**TELECHRON CLOCK**  
Combination clock and automatic timer. Aids in prearranged timing. Optional extra.



**SPEAKER**  
S-200 speaker magnetically coupled to HQ-170 electrically. Extends 6" x 9", 8 watt. Housed in attractive black finish.

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### SPEAKER

S-200 speaker matching HQ-170 electrically and mechanically. Extended range 6" x 9", 8 watt capacity. Housed in attractive metal cabinet.



Established 1910

# HAMMARLUND

Hammarlund Manufacturing Company, Inc.,

460 West 34th Street, New York 1, N. Y.

International Division: 13 East 40th Street, New York 16, N. Y.



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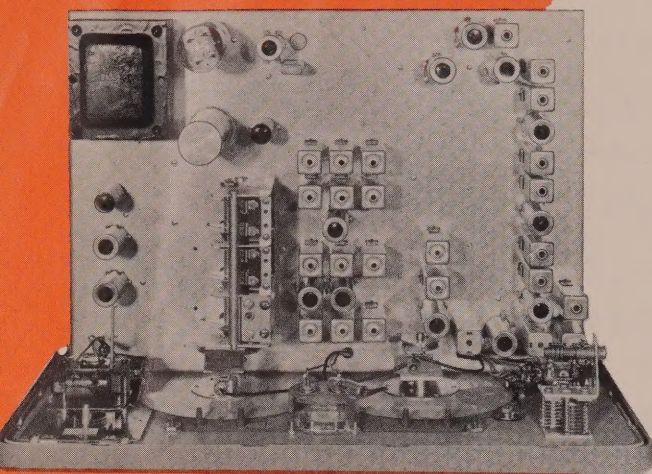
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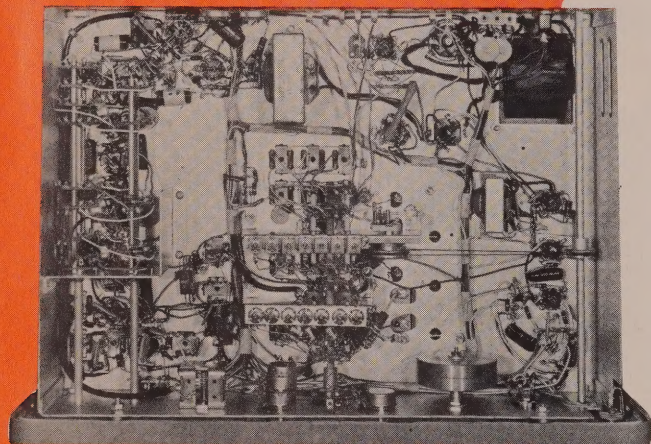
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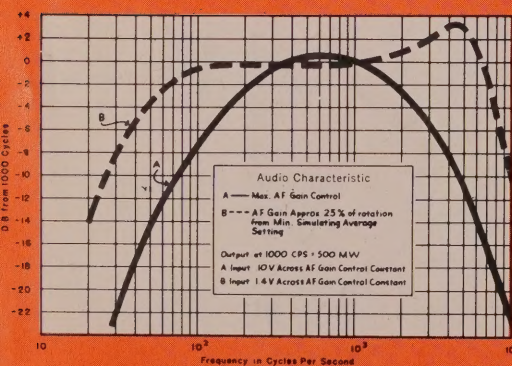




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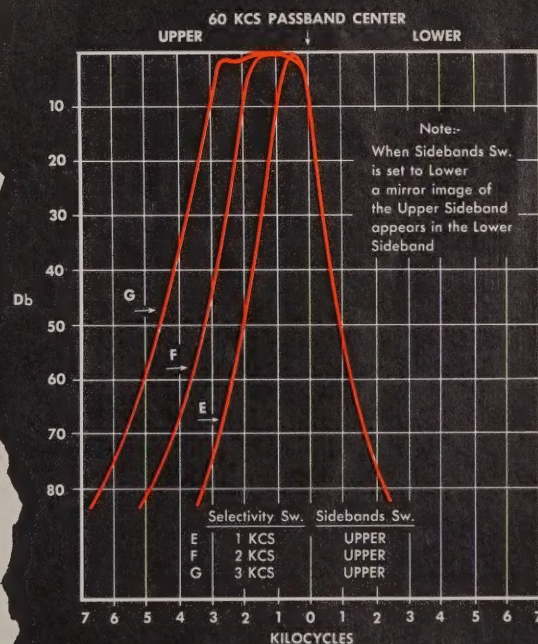
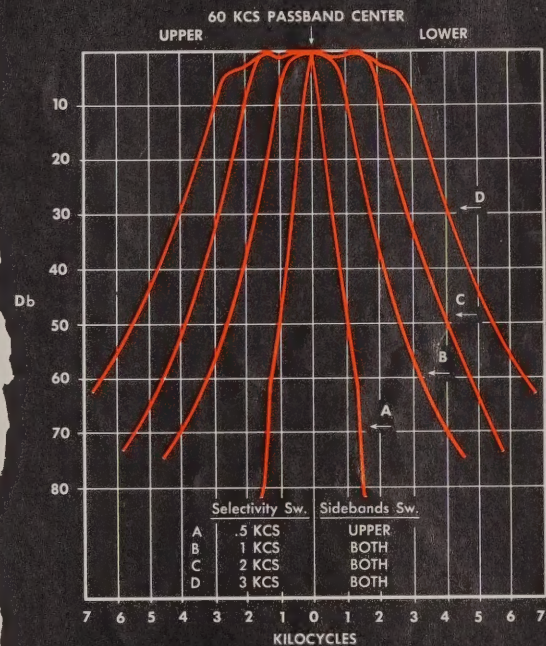
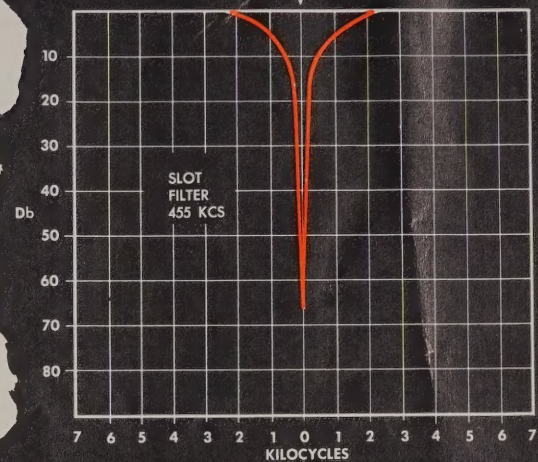
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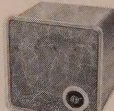
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<b>Output Impedance:</b>	3.2 Ohms (RETMA Standard)																				
<b>AVC Action:</b>	Operates on RF and 3 IF stages. Provides fast charge—adjustable discharge smooth acting AVC. Delayed AVC applied to the RF and (1) IF stage. Better than .001 second attack time and .01-1-1. Second decay time. Off position.																				
<b>Adjustable Selectivity and Selectable Sidebands:</b>	6 db bandwidths Upper sideband—1-2-3 kcs Lower sideband—1-2-3 kcs Both sidebands—5-2-4-6 kcs																				
<b>Sensitivity:</b>	An average of 1.5 microvolts produces 10:1 signal-to-noise ratio on AM approximately .5 uv on CW.																				
<b>Antenna Input:</b>	100 ohms nominal balanced or unbalanced. Provision for separate 50 ohm coaxial 6 meter antenna.																				
<b>Antenna Compensator:</b>	Permits compensation for loading effects of various type antennas, or balanced transmissions line.																				
<b>Beat Freq. Oscillator:</b>	Variable from zero beat plus/minus 2 kcs.																				
<b>Slot Filter:</b>	Range plus/minus 5 kcs of center frequency. Attenuation over plus/minus 5 kcs range provides over 40 db. Calibrations every 1 kc. Maximum attenuation using slot depth control is 60 db. 8:1 vernier tuning ratio.																				
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<b>Power Supply:</b>	105-125 Volts 50-60 cps. a.c. power consumption, 120 watts.																				
<b>"S" Meter:</b>	Calibrated 1 to 9 in steps approximately 6 db. Also includes db scale, above S-9 to plus 40 db. (Meter deflects on all types of signals.)																				
<b>Noise Limiter:</b>	Adjustable series type provides both positive and negative clipping.																				
<b>Front Panel Equipment:</b>	<table><tr><td>Main Tuning</td><td>Function Switch: AM-SSB/CW</td></tr><tr><td>Vernier or Bandpass Tuning</td><td>Slot Freq. Calib.—Slot Depth</td></tr><tr><td>Sensitivity (RF Gain): on/off switch</td><td>CW Tone (BFO Pitch)</td></tr><tr><td>Selectivity: 0.5 -1-2-3 Kcs. (per sideband)</td><td>Noise Limiter, adjustable on/off switch</td></tr><tr><td>Sideband: Upper-lower-both</td><td>AVC, off-slow-medium-fast</td></tr><tr><td>Audio Gain</td><td>Send-Receive-Calibrator-ON Switch</td></tr><tr><td>Antenna Compensator</td><td>"S" Meter Phone Jack</td></tr><tr><td>Tuning Range (Band Selector)</td><td>Dial Scale reset</td></tr></table>			Main Tuning	Function Switch: AM-SSB/CW	Vernier or Bandpass Tuning	Slot Freq. Calib.—Slot Depth	Sensitivity (RF Gain): on/off switch	CW Tone (BFO Pitch)	Selectivity: 0.5 -1-2-3 Kcs. (per sideband)	Noise Limiter, adjustable on/off switch	Sideband: Upper-lower-both	AVC, off-slow-medium-fast	Audio Gain	Send-Receive-Calibrator-ON Switch	Antenna Compensator	"S" Meter Phone Jack	Tuning Range (Band Selector)	Dial Scale reset		
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Antenna Compensator	"S" Meter Phone Jack																				
Tuning Range (Band Selector)	Dial Scale reset																				
<b>Rear Panel Equipment:</b>	Terminal for speaker connections. Terminals for balanced and unbalanced antennas, with separate 6 meter antenna connections. Jack for external send-receive relay connections. Fuse.																				
<b>Dimensions:</b>	10½" H x 19" W x 13" D Wt. 38 lbs. Shipping Wt. 45 lbs.																				

The policy of the Hammarlund Manufacturing Company, Inc. is one of continued improvement in design and manufacture and whenever possible, to provide the best attainable quality and performance. Hence, specifications, finishes, etc. are subject to change without notice and without assumption by Hammarlund of any obligation or responsibility to provide such features. They may be changed, added or dropped in any of our previous production runs of this equipment.



**TELECHRON CLOCK**  
Combination clock and automatic timer. Aids in timing prearranged sequences. Optional extra.



**S-100 SPEAKER**  
Matching 6" x 9" Extended range capacity. Housed in a protective metal cabinet, wide, 9½" high.

The policy of the Hammarlund Manufacturing Company, Inc. is one of continued improvement in design and manufacture wherever and whenever possible, to provide the highest attainable quality and performance. Hence, specifications, finishes, etc. are subject to change without notice and without assumption by Hammarlund of any obligation or responsibility to provide such features as may be changed, added or dropped from previous production runs of this equipment.



### TELECHRON CLOCK-TIMER

Combination clock and automatic timer. Aids in meeting prearranged schedules. Optional extra.



### S-100 SPEAKER

Matching 6" x 9" speaker. Extended range. 8 watt capacity. Housed in attractive metal cabinet. 9½" wide, 9½" high, 7" deep. (Optional accessory).



# HAMMARLUND

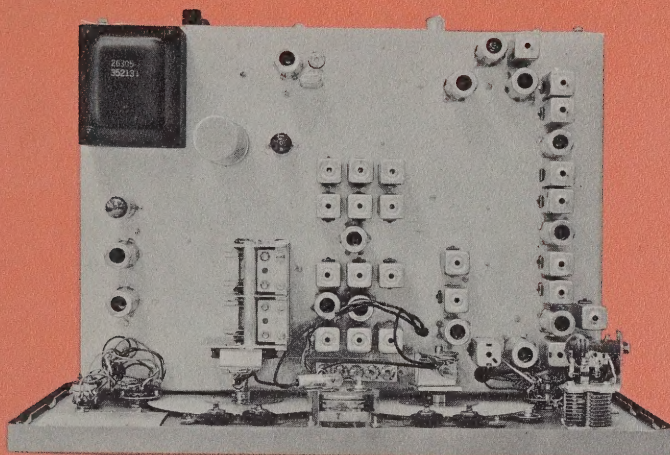
Hammarlund Manufacturing Company, Inc.,

460 West 34th Street, New York 1, N. Y.

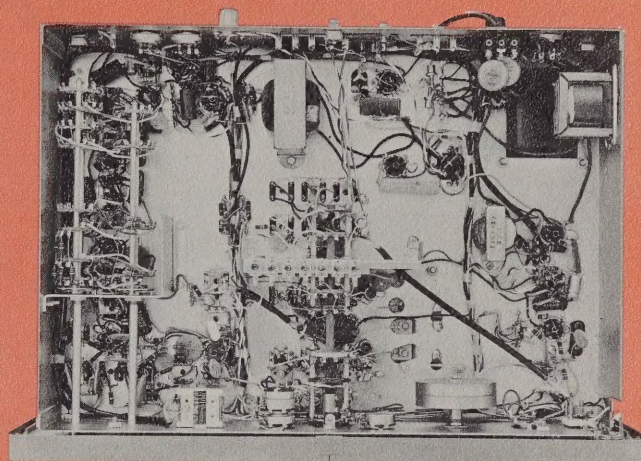
International Division: 13 East 40th Street, New York 16, N. Y.



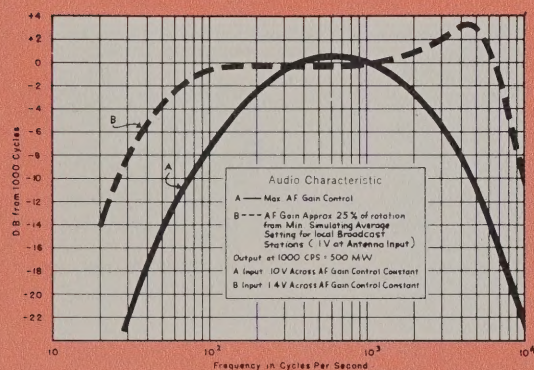
# HQ-170-A



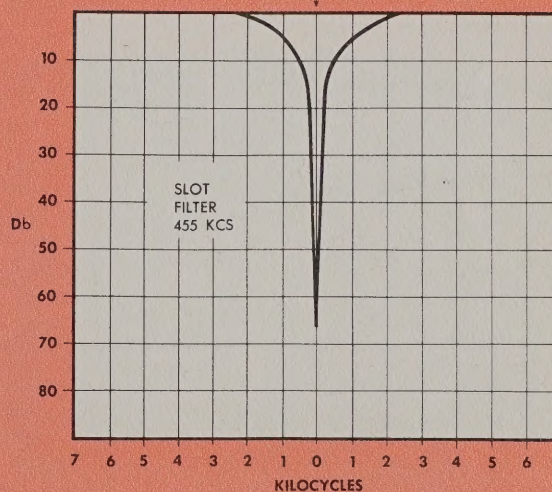
TOP VIEW



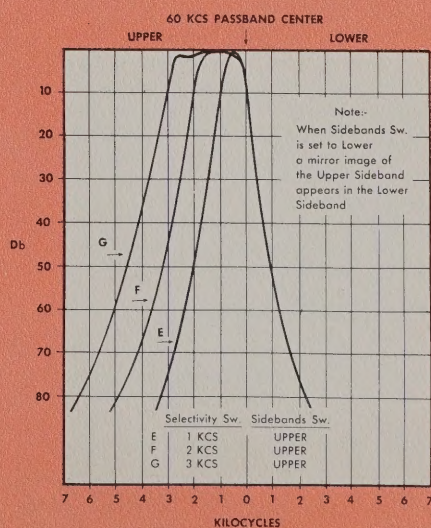
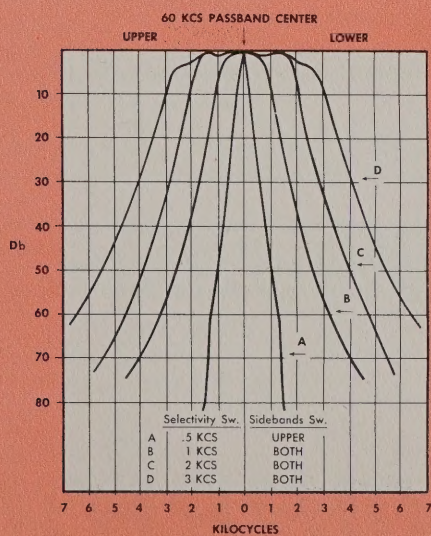
BOTTOM VIEW



HQ-170-A AUDIO CHARACTERISTIC



HQ-170-A SLOT FILTER



60 KCS I.F. RESPONSE



# HQ-170-A SPECIFICATIONS

## Amateur Bands Covered:

6, 10, 15, 20, 40, 80, and 160 meter bands.

## Calibration:

Dial markings every 5 KCS on 20, 40, 80, and 160 meter bands; every 10 KCS on 15 meter band; every 20 KCS on 10 meter band; every 50 KCS on 6 meter band. Plus 2 meter calibration scale.

## Number of Frequency Conversions:

Dual on 160 and 80 meter bands. Triple on 40, 20, 15, 10, and 6 meter bands.

## Frequency Range Covered:

1.8-2.0 Mcs. 3.5-4.0 Mcs. 7.0-7.3 Mcs. 14.0-14.4 Mcs. 21.0-21.6 Mcs. 28.0-30.0 Mcs. 50.0-54.0 Mcs. Converter Scale 144-148 Mcs.

## Maximum Audio Output:

1.0 Watt (Undistorted)

## Passband Tuning Range:

plus/minus 3 KCS with calibration every 1 KC. 8:1 vernier tuning ratio.

## Output Impedance:

3.2 Ohms (EIA Standard) plus 500 Ohms.

## AVC Action:

Operates on RF and 3 IF stages. Provides fast charge—adjustable discharge smooth acting AVC. Delayed AVC applied to the RF stage. Better than .001 second attack time and .01-.1 second decay time. Off position.

## Adjustable Selectivity and Selectable Sidebands:

6 db bandwidths Upper sideband—1-2-3 kcs Lower sideband—1-2-3 kcs Both sidebands—5.2-4-6 kcs

## Sensitivity:

.7  $\mu$ V on SSB and CW. An average of 1.5 microvolts produces 10:1 signal-to-noise ratio on A.M.

## Antenna Input:

100 ohms nominal balanced or unbalanced. Provision for separate 50 ohm coaxial 6 meter antenna. Plus SO239 (UHF) Antenna connector accessory socket.

## Antenna Compensator:

Permits compensation for loading effects of various type antennas, or balanced transmission line.

## Beat Frequency Oscillator:

Fixed position for SSB. Variable from zero beat  $\pm 2$  KCS.

## Slot Filter:

Range plus/minus 5 kcs of center frequency. Attenuation over plus/minus 5 kcs range provides over 40 db. Calibrations every 1 kc. Maximum attenuation using slot depth control is 60 db. 8:1 vernier tuning ratio.

## Tube Complement:

6BZ6	RF Amplifier
6BE6	1st Converter
6C4	HF Oscillator
6BE6	2nd Mixer-Crystal Osc.
6BA6	455 kc IF Amp.
6BE6	3rd Mixer-Variable Osc.

6BA6	60 kc IF Amp.
6BA6	60 kc IF Amp.
6BV8	60 kc IF Amp. AVC-AM Det.
12AU7	SSB Product Detector
6AL5	Noise Limiter
12AU7	BFO-"S" Meter Amplifier
6AV6	1st AF Amp.-Delayed AVC Clamp
6AQ5	Audio Power Output
0B2	Voltage Regulator
6BZ6	Crystal Calibrator

## Semiconductor Complement:

Rectifier — Two 800 V P.I.V. at  $\frac{1}{2}$  amp.

## Power Supply:

105-125 Volts 50-60 cps. a.c. power consumption, 120 watts.

## "S" Meter:

Calibrated 1 to 9 in steps approximately 6 db. Also includes db scale, above S-9 to plus 40 db. (Meter deflects on all types of signals.)

## Noise Limiter:

Adjustable series type provides both positive and negative clipping.

## Front Panel Equipment:

Main Tuning	Function Switch: AM-SSB-CW
Vernier or Bandpass Tuning	Slot Freq. Calib.—Slot Depth
Sensitivity (RF Gain):	CW Tone (BFO Pitch)
on/off switch	Noise Limiter, adjustable
Selectivity: 0.5 -1-2-3 Kcs.	-on/off switch
(per sideband)	AVC, off-slow-medium-fast
Sideband: Upper-lower-both	Send-Receive-Calibrator-
Audio Gain	ON Switch
Antenna Compensator	"S" Meter-Phone Jack
Tuning Range (Band Selector)	Dial Scale reset

## Rear Panel Equipment:

Terminals for speaker connections  
3.2 ohm for voice coil  
500 ohm for line or VOX

Accessory socket for preamp, Q-multiplier or converter.

System socket for simplified associated transmitter/receiver control.

Phono-type coax fitting 455 KC output for Q-multiplier or other use.

S-meter controls.

Antenna input terminals plus SO239 for HF input and phono-type coax input for 6 meter antenna or converter unit.

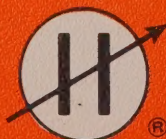
## Dimensions:

10 $\frac{1}{2}$ " H x 19" W x 13" D  
Wt. 38 lbs.  
Shipping Wt. 45 lbs.



## 24 HOUR CLOCK-TIMER

Combination clock and automatic timer. Aids in meeting prearranged schedules. Optional extra.



Established 1910



# HAMMARLUND

Hammarlund Manufacturing Company A Giannini Scientific Co.

53 West 23rd Street, New York 10, N. Y.

Export Department: 13 East 40th Street, New York 16, N. Y.



**Triple Conversion** . . . 16-tube superheterodyne circuit with automatic noise limiter.

**Frequency Range** . . . Full dial coverage of the 6, 10, 15, 20, 40, 80 and 160 meter amateur bands plus 2 meter calibration.

**Slot Filter** . . . Razor sharp. 1.5 KCS at 6 db. Adjustable  $\pm 5$  KCS over passband for better than 40 db attenuation. Additional attenuation of 20 db at any point by Slot Depth Control.

**Separate Venier Tuning** . . .  $\pm 3$  KCS for easy SSB tuning.

**Separate Linear Detector** . . . Linear product detector for CW and SSB reception, plus normal diode AM detection.

**Tuned IF Amplifier** . . . Seven selectivity positions provide mechanical filter type skirt selectivity.

**Selectable Sideband** . . . Upper, lower, or both sidebands selected from front panel.

**Silicon Rectifiers** . . . In power supply.

**BFO Control** . . .  $\pm 2$  KCS CW. FIXED Position for SSB.

**Accessory Outlet** . . . For pre-amp, Q-multiplier or converter.

**Fast Attack AVC** . . . Selectable, OFF, SLOW, MEDIUM, FAST decay speeds. AVC obtained from high selectivity 60 KCS IF.

**Crystal Calibrator** . . . Built-in 100 KCS crystal calibrator.

**Dial Scale Reset** . . . Easy-to-use, adjustable calibration for frequency dials.

**Automatic Noise Limiter** . . . Combination adjustable noise limiter and squelch.

**Auto-Response** . . . Automatically adjusts audio response to fit receiving conditions.

**Cabinet** . . . Modern, super-ventilating type with sturdy, attractive front panel and easy-access lid.

# NEW

## AND EXCITING TRIPLE CONVERSION HAMMARLUND HQ-170-A THE SINGLE SIDEBAND SPECIALIST



An SSB standout as the HQ-170, the radically improved HQ-170-A blazes a new path for amateur radio receivers. NEW features, including significantly better electrical and mechanical stability, silicon rectifiers for cooler, high-efficiency operation, 2 meter calibration, an accessory outlet and a system socket — provide an unmatched degree of operating ease and performance.

Check this outstanding list of features against any comparably priced receiver and you are sure to reach the conclusion that there is more dollar value in the sparkling HQ-170-A —more value, more performance—more of everything you want for optimum SSB reception.

An optional accessory, Hammarlund's Noise Immunizer completely eliminates noise interference caused by domestic or industrial equipment as well as impulse noise caused by spark discharges of power line leaks and ignition systems. A noise immunized HQ-170A will bring in signals considered impossible on other receivers.

The universally recognized Hammarlund policy of "No-compromise-with-quality" assures complete satisfaction—now, and for years to come.



Established 1910

# HAMMARLUND

Hammarlund Manufacturing Company A Giannini Scientific Co.  
53 West 23rd Street, New York 10, N. Y.  
Export Department: 13 East 40th Street, New York 16, N. Y.





# HAMMARLUND

Starting with the front panel layout, the careful selection of high-reliability components, the craftsmanship of skilled technicians, and the addition of engineering leadership result in a receiver worthy of the Hammarlund name in quality and performance.

The HQ-170-A offers the amateur a practically endless combination of tuning techniques whereby optimum reception of SSB/CW and AM/MCW may be achieved. Through the use of the vernier tuning, adjustable bandwidth, and the basic, precision front-end of the HQ-170-A the user has full control over SSB signals as well as adjacent, or co-channel signals. If there's a signal to be received, the HQ-170-A can ferret it out...

The HQ-170-A is a "hot" receiver. It will provide 10 db signal-to-noise ratio at 1.5  $\mu$ volt AM or approximately .5  $\mu$ volt CW, or better depending on bandwidth. The front-end provides tuning of the 6, 10, 15, 20, 40, 80 and 160 meter amateur bands. The receiver is designed for use with a single wire flat top, a folded dipole, or doublet antenna. Separate antenna terminals are provided for 6-meter reception, so that a separate 6-meter coaxial antenna may be installed to achieve the ultimate in receiving sensitivity at this frequency.

**CIRCUITRY** The HQ-170-A is a triple-conversion receiver on the 7 MCS through 54 MCS bands and dual conversion on the 1.8 MCS to 2.0 MCS and 3.5 MCS to 4.0 MCS bands.

Starting at the front-end, the HQ-170-A utilizes a (6BZ6) tuned RF amplifier and a separate mixer (6BE6) and oscillator (6C4) for a high degree of stability. Advanced designed and modern tube types account for the very high gain and low noise factor. Refer to back page for complete listing of the many possible functions and the complete tube lineup.

Low-loss, coil forms, and bandswitch wafers, plus temperature-compensating capacitors, and the application of regulated power to the oscillator circuit provide a high degree of stability.

**BANDSPREAD** Electrical bandspread tuning with direct dial calibration is provided for all seven bands; 160, 80, 40, 20, 15, 10 and 6 meters. Through the use of two dials, optimum bandspread has been achieved by greater dial scale length. A 144 MC scale is also included.

**TRIPLE CONVERSION** The HQ-170-A offers triple conversion with IF frequencies of 3035 KCS, 455 KCS, and 60 KCS, providing excellent rejection of image-response. The second IF is heterodyned with a crystal-controlled oscillator. The third IF is heterodyned with a high stability, adjustable oscillator which contains micro-accurate vernier tuning control, located on the front panel.

**IF AMPLIFIER** The 3035 KCS and 455 KCS IF amplifiers provide eight tuned circuits in three stages of amplification. Six tuned circuits in the three-stage

60 KCS amplifier provide either the second or third conversion, depending upon the operating band. All IF circuits employ iron-core permeability-tuned transformers for high performance and retention of alignment accuracy. The 60 KCS amplifier selectivity is controlled from the front panel by seven positions: 1-2-3 KCS on either sideband, and .5-2-4-6 KCS on both sidebands. The skirt selectivity of this system approaches that of the mechanical filter. A separate front panel switch is used to select upper, lower, or both sidebands, providing rapid, simple means of sideband selection. A 455 KC output jack is provided for a Q-multiplier or visual spectrum analyzer.

**SLOT FILTER** The slot filter provides a notch of better than 60 db attenuation over the entire range of  $\pm 5$  KCS from the center IF (455 KCS) frequency. The slot filter control provides 40 db attenuation, plus an additional attenuation of up to 20 db obtainable by use of the slot depth control at a particular frequency. The 6 db width of the slot is approximately 1.5 KCS. Accurate frequency adjustment of the slot is obtained by means of an 8:1 vernier control. The slot filter circuit consists of a Bifilar "T" trap.

**SEPARATE VERNIER TUNING**  $\pm 3$  KCS vernier tuning allows extra-fine pass-band tuning between the 455 KCS IF and the 60 KCS IF for additional selectivity and easy tuning of the desired signal.

**AVC** An extremely fast-attack delayed AVC circuit is employed. A four position control on the front panel permits the selection of OFF-AVC or SLOW-MEDIUM-FAST AVC decay time for optimum results on various signals. The AVC is taken from the high selectivity 60 KCS IF.

**S-METER** Readings of signal strength and "on-the-point" tuning indications are provided on all types of signals by a high-response S meter circuit. The scale is calibrated to 40 db over S-9 and is factory-calibrated so a signal of approximately 50 microvolts reads S-9. Each S-unit indicates approximately a 6 db increase, equivalent to doubling the signal strength. S-meter is extremely effective on SSB and CW when using slow decay AVC.

**AUDIO** The HQ-170-A features the exclusive Hammarlund Auto-Response which automatically adjusts the audio passband to best meet the receiving conditions. A (6AQ5) provides 1.0 watts for maximum undistorted output. The Auto-Response circuit employs controlled feedback which is decreased as the gain control is turned up, thus narrowing the audio passband. As the gain is decreased, the feedback increases, thus permitting a greater frequency response in the audio output. The result is crisper, easier to read sound on weaker signals, and broader, more realistic reproduction on stronger signals.

The audio output may be used with either earphones or loudspeaker. The phone plug automatically silences the speaker upon insertion. The Audio-Response permits tops in listening pleasure of AM, SSB, and CW reception.

144 to 148 Mcs. dial calibration provided for use with converter  
having output tunable I.F. frequency range of 50 to 54 Mcs.